

# Reflective Object Sensor

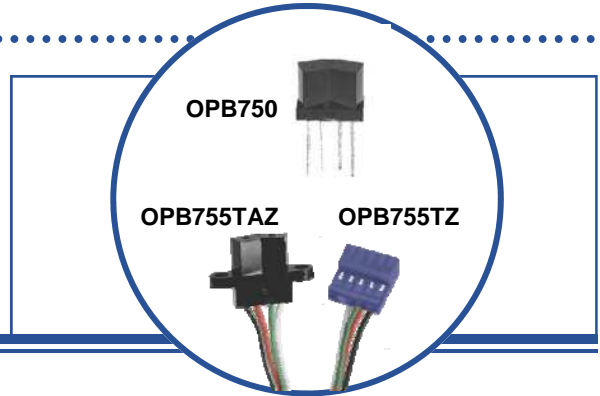
## OPB750N, OPB750T

## OPB755NZ, OPB755TZ, OPB755TAZ



### Features:

- High contrast ratio (1,000 :1 minimum)
- Low cost plastic housing
- PCBoard mount (OPB750N, OPB750T)
- 12" (305 mm) 26 AWG wires (OPB755NZ, OPB755TZ)
- Available with no-mounting tabs "N" package
- Available with two mounting tabs "T" package



### Description:

Each sensor in the **OPB750** and **OPB755** series has a reflective assembly that features a Light Emitting Diode (LED) and phototransistor output designed to decrease low-level light, while not affecting the high-level light gain.

The **OPB750N** and **OPB750T** devices have are designed for PCBoard mounting with 0.40" (10 mm) length leads. **OPB755NZ**, **OPB755TZ** and **OPB755TAZ** assemblies are designed for remote mounting. The **OPB755NZ** and **OPB755TZ** have 12" (305 mm) UL rated wire, 26 AWG wire leads that terminate into an AMP # 3-640442-5 connector. The **OPB755TAZ** has 24" (610 mm) UL rated wire, 26 AWG leads. The **OPB750T**, **OPB755TZ** and **OPB755TAZ** have two mounting tabs while the **OPB750N** and **OPB755NZ** have no mounting tabs.

Photologic® output versions are available with the **OPB760** and **OPB770** series.

Custom electrical, wire and cabling and connectors are available. Contact your local representative or OPTEK for more information.

### Applications:

- Non-contact reflective object sensor
- Assembly line automation
- Machine automation
- Machine safety
- End of travel sensor

Ordering Information					
Part Number	LED Peak Wavelength	Sensor	Reflection Distance Inch	Lead Length	Tabs
OPB750N	890 nm	Transistor & Rbe	0.080" (2.03 mm)	0.40"	No tabs
			0.150" (3.81 mm)		
			0.220" (5.59 mm)		
OPB750T			0.080" (2.03 mm)		2 Tabs
			0.150" (3.81 mm)		
			0.220" (5.59 mm)		
OPB755NZ	890 nm	Transistor & Rbe	0.080" (2.03 mm)	12" / 26 AWG Wire with connector	No tabs
			0.150" (3.81 mm)		
			0.220" (5.59 mm)		
OPB755TZ			0.080" (2.03 mm)		2 Tabs
			0.150" (3.81 mm)		
			0.220" (5.59 mm)		
OPB755TAZ			0.080" (2.03 mm)	24" / 26 AWG Wire NO connector	
			0.150" (3.81 mm)		
			0.220" (5.59 mm)		

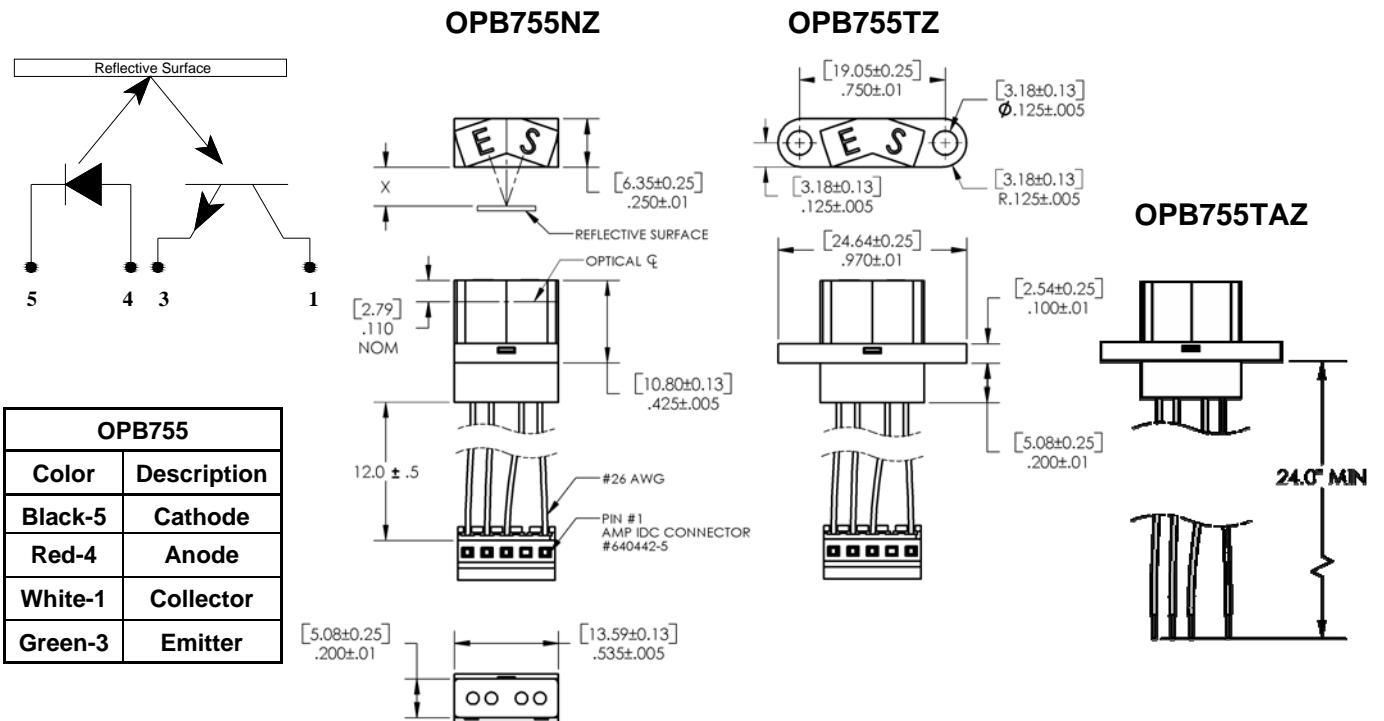
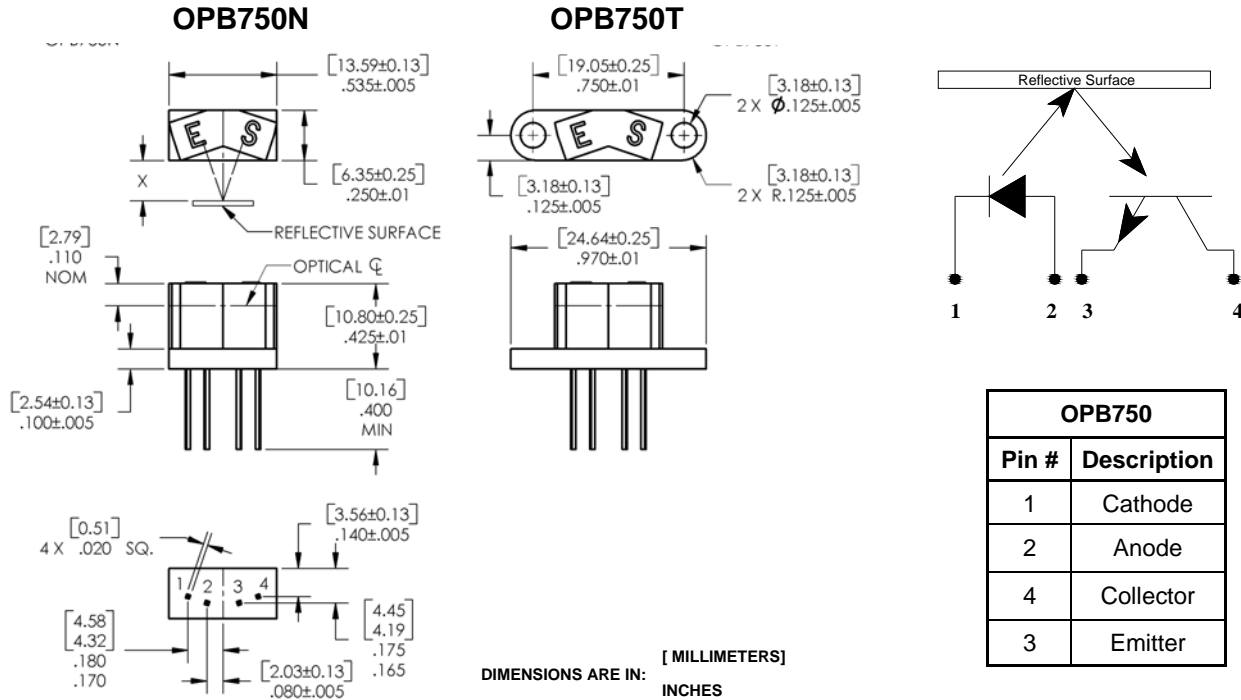


**RoHS** OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

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### Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Operating and Storage Temperature Range OPB750N, OPB750T OPB755NZ, OPB755TZ, OPB755TAZ	-40°C to + 85°C -40°C to + 80°C
Lead Soldering Temperature <sup>(1)</sup>	260°C

### Input Diode

Forward DC Current	50 mA
Peak Forward Current (1 $\mu$ pulse width, 300 pps)	1 A
Reverse DC Voltage	2 V
Power Dissipation	100 mW

### Output Phototransistor

Collector-Emitter Voltage	24 V
Collector DC Current	30 V
Power Dissipation <sup>(3)</sup>	100 mW

### Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
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#### Input Diode (See OP240 for additional information)

$V_F$	Forward Voltage	-	-	1.8	V	$I_F = 40 \text{ mA}$
$I_R$	Reverse Current	-	-	100	$\mu\text{A}$	$V_R = 2 \text{ V}$

#### Output Phototransistor (see OP550 for additional information)

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	24	-	-	V	$I_C = 100 \mu\text{A}$
$I_{CEO}$	Collector Dark Current	-	-	100	nA	$V_{CE} = 10 \text{ V}, I_F = 0, H = 0$

#### Coupled

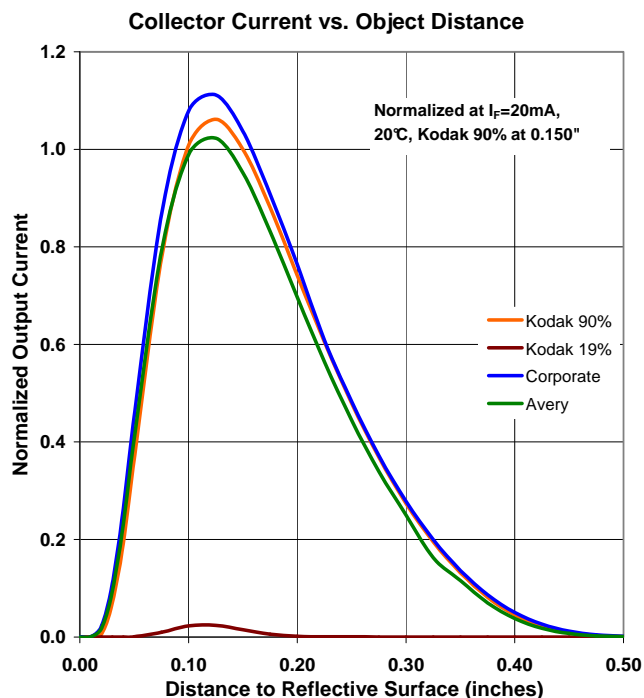
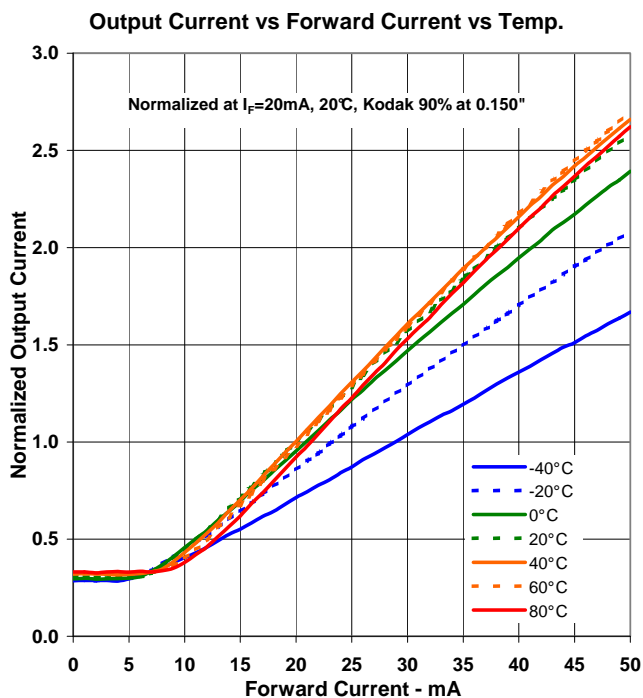
$V_{CE(SAT)}$	Saturation Voltage	-	-	.40	V	$I_C = 150 \mu\text{A}, I_F = 30 \text{ mA}, d = 0.22''$
$I_{C(OFF)}$	Off-State Collector Current <sup>(5)</sup>	-	-	250	nA	$I_F = 30 \text{ mA}, V_{CE} = 5 \text{ V}$ $d = 0.08'', 0.15'', 0.22''$
$I_{C(ON)}$	On-State Collector Current <sup>(4)</sup>	500 375 250	- - -	- - -	$\mu\text{A}$	$I_F = 30 \text{ mA}, V_{CE} = 5 \text{ V}, d = 0.08''$ $I_F = 30 \text{ mA}, V_{CE} = 5 \text{ V}, d = 0.15''$ $I_F = 30 \text{ mA}, V_{CE} = 5 \text{ V}, d = 0.22''$

#### Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
- (2) Derate linearly 1.67 mW/ $^\circ\text{C}$  above 25° C.
- (3) Methanol or isopropanol are recommended as cleaning agents. Plastic housing is soluble in chlorinated hydrocarbons and ketones.
- (4) Photocurrent is measured using an Eastman Kodak neutral white test card having 90% diffuse reflectance as a reflecting surface. Reference: Eastman Kodak, Catalog #E 152 7795.

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